

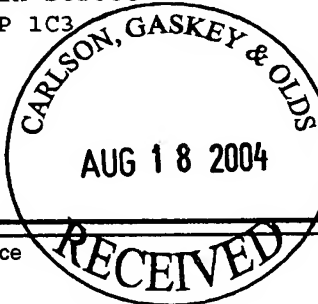
PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

GOWLING LAFLEUR HENDERSON LLP
Attn. Smith, Dallas F.
Suite 2600, 160 Elgin Street
Ottawa, Ontario K1P 1C3
CANADA



NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

AUG 04 2004

GOWLING LAFLEUR HENDERSON LLP

Date of mailing
(day/month/year)

03/08/2004

Applicant's or agent's file reference

08900066WO

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/CA2004/000386

International filing date
(day/month/year)

15/03/2004

Applicant

INTELLIGENT MECHATRONIC SYSTEMS INC.

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of **18 months** from the priority date, the International application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the International application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority

European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Mareike Zambuto

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 08900066WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, Item 5 below.	
International application No. PCT/CA2004/000386	International filing date (day/month/year) 15/03/2004	(Earliest) Priority Date (day/month/year) 13/03/2003
Applicant INTELLIGENT MECHATRONIC SYSTEMS INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the International search was carried out on the basis of the International application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the International application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA2004/000386

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06K9/00 B60R21/01 B60N2/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06K B60R B60N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 734 909 A (ROCKWELL INTERNATIONAL CORP) 2 October 1996 (1996-10-02) the whole document -----	1-7, 9-15, 17, 18, 20-22
X	US 6 141 432 A (JOHNSON WENDELL C ET AL) 31 October 2000 (2000-10-31) the whole document -----	1, 4-12, 16, 20-23
X	EP 1 033 290 A (DELPHI TECH INC) 6 September 2000 (2000-09-06) the whole document -----	1, 2, 4, 7, 10-14, 24
X	EP 1 251 465 A (UNIV WISCONSIN SYSTEMS BOARD O) 23 October 2002 (2002-10-23) the whole document ----- -/-	1, 4-7, 9-14, 20-22, 24

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

23 July 2004

Date of mailing of the international search report

03/08/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Neubüser, B

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA2004/000386

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 199 47 062 A (HONDA MOTOR CO LTD) 13 April 2000 (2000-04-13) the whole document -----	1-4, 10, 20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA2004/000386

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0734909	A	02-10-1996	US 5528698 A	18-06-1996
			EP 0734909 A2	02-10-1996
			JP 8290751 A	05-11-1996
<hr/>				
US 6141432	A	31-10-2000	US 5845000 A	01-12-1998
			US 2002116106 A1	22-08-2002
			US 2003125855 A1	03-07-2003
			US 6393133 B1	21-05-2002
			US 2003209893 A1	13-11-2003
			US 2004129478 A1	08-07-2004
			US 2001003168 A1	07-06-2001
			US 2001029416 A1	11-10-2001
			US 2002029103 A1	07-03-2002
			GB 2301922 A ,B	18-12-1996
			US 6039139 A	21-03-2000
			US 2002089157 A1	11-07-2002
			US 2002140214 A1	03-10-2002
			US 2002140215 A1	03-10-2002
			US 2002188392 A1	12-12-2002
			US 6735506 B2	11-05-2004
			US 2003002690 A1	02-01-2003
			US 2003001368 A1	02-01-2003
			US 2003184065 A1	02-10-2003
			US 6270116 B1	07-08-2001
			US 6712387 B1	30-03-2004
			US 6283503 B1	04-09-2001
			US 5835613 A	10-11-1998
			US 5822707 A	13-10-1998
			US 5748473 A	05-05-1998
			US 6412813 B1	02-07-2002
			US 6234520 B1	22-05-2001
			US 6254127 B1	03-07-2001
			US 6474683 B1	05-11-2002
			US RE37736 E1	11-06-2002
			US 6422595 B1	23-07-2002
			US 2001015547 A1	23-08-2001
			US 2001024032 A1	27-09-2001
			US 2001038698 A1	08-11-2001
			US 2001042976 A1	22-11-2001
			US 5848802 A	15-12-1998
			US 6186537 B1	13-02-2001
			DE 4492128 C2	02-01-2003
			DE 4492128 T0	27-06-1996
			JP 9501120 T	04-02-1997
			WO 9422693 A1	13-10-1994
			US 6168198 B1	02-01-2001
			US 5653462 A	05-08-1997
			US 5829782 A	03-11-1998
			GB 2289786 A ,B	29-11-1995
			JP 8198044 A	06-08-1996
			US 6209909 B1	03-04-2001
			US 2002092693 A1	18-07-2002
			US 2002093180 A1	18-07-2002
<hr/>				
EP 1033290	A	06-09-2000	US 6298311 B1	02-10-2001
			DE 60010161 D1	03-06-2004
			EP 1033290 A2	06-09-2000
			US 2003204363 A1	30-10-2003

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA2004/000386

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 1251465	A	23-10-2002	US	2002169532 A1	14-11-2002
			AU	3437102 A	24-10-2002
			BR	0201532 A	07-01-2003
			CA	2381915 A1	18-10-2002
			EP	1251465 A2	23-10-2002
			JP	2003040016 A	13-02-2003
<hr/>					
DE 19947062	A	13-04-2000	JP	2000113164 A	21-04-2000
			DE	19947062 A1	13-04-2000
			US	6548804 B1	15-04-2003
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/CA2004/000386

International filing date (day/month/year)
15.03.2004

Priority date (day/month/year)
13.03.2003

International Patent Classification (IPC) or both national classification and IPC
G06K9/00, B60R21/01, B60N2/00

Applicant
INTELLIGENT MECHATRONIC SYSTEMS INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
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Authorized Officer

Neubüser, B

Telephone No. +31 70 340-4983



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CA2004/000386

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/CA2004/000386

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-24
Inventive step (IS)	Yes: Claims	
	No: Claims	1-24
Industrial applicability (IA)	Yes: Claims	1-24
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D₁: EP-A-0 734 909 (ROCKWELL INTERNATIONAL CORP) 2 October 1996 (1996-10-02)
- D₂: US-A-6 141 432 (JOHNSON WENDELL C ET AL) 31 October 2000 (2000-10-31)
- D₃: EP-A-1 033 290 (DELPHI TECH INC) 6 September 2000 (2000-09-06)
- D₄: EP-A-1 251 465 (UNIV WISCONSIN SYSTEMS BOARD O) 23 October 2002 (2002-10-23)

1. The present application does not meet the criteria of Article 33(1) PCT, because the **subject-matter of all claims 1-24 is not new** in the sense of Article 33(2) PCT.
 - 1.1 The document D₁ discloses (the references in parentheses applying to this document):
 - a method for classifying an occupant including the steps of:
 - a. capturing an image of a plurality of occupant areas;
(Abstract: "A vehicle occupant safety system includes an image sensor (414) and processor (318) that provides a classification of the occupancy status of the passenger seat area to determine whether an airbag should be deployed"; description, column 4, lines 27-32: "Mounting embodiments of the automotive occupant sensor system in the overhead console 202 is generally preferred for supporting embodiments of the present invention to allow the features of the most of the vehicle interior seating area to be seen".)
 - b. dividing the image into a plurality of subimages of predetermined spatial regions;
(description column 7, lines 24-26: "The preprocessed image 612 then becomes the sub-image space 620 which is input into a segmentor 622".)
 - c. generating a spatial feature matrix of the image based upon the plurality of subimages;
 - d. analyzing the spatial feature matrix; and
 - e. classifying a plurality of occupants in the occupant areas based upon said step d).

(description column 8, lines 1-9, "As shown in Figure 6, the output of the edge operator which performs the functions of the IPL 632 along with the output of the spoke filter becomes the feature vector space 640. The feature vector space 640 is then input into the feature correlator 642 which tries to match the feature vector space 640 to the different stored templates, or reference library, which contains data describing idealized child carrier seat, empty seat, and passenger classifications.")

- 1.1.1 Moreover, the subject-matter of independent claims 1, 10 and 20 is also known from D₂ (abstract), D3 (abstract and Fig. 1) and D₄ (abstract).
- 1.2 The same reasoning applies, *mutatis mutandis*, to the subject-matter of the corresponding independent apparatus **claim 10**, which therefore is also considered not new.
- 1.3 The same reasoning applies, *mutatis mutandis*, to the subject-matter of the independent method **claim 20**, which therefore is also considered not new. The difference between claim 1 and claim 20 is the use of *low-level descriptors* instead of *features*. As discussed in item VII, 1.2 the term *low-level descriptor* is vague and in particular, it is not clear what differentiates it from the term *feature*. This objection notwithstanding, the application states in paragraph 21 of the description that *edge information* is considered a low-level descriptor. Document D₁ discloses (description, column 7, lines 34-40): "The *edge* operator 632 also identifies the angles of the *edges* based upon the positions of the edge pixels of adjacent neighbours. Thus, the IPL 632 indicates whether the edges are vertical, horizontal or at 45 DEG angles relative to the enhanced image to classify the image in accordance with stored data representing typical shapes and configurations of conventional child carriers, empty seats, and passengers." and lines 55-58, same column: "Both software and hardware versions of edge detection filters have been examined, and may be incorporated into embodiments of the invention to maximize the edge detection, distinction, and differentiation.".
- 1.4 The subject matter of **claim 2** is not novel. Additionally to the subject matter of claim 1 document D₁ discloses
 - that the method includes a step of processing the image to account for lighting and motion before said step d).(description column 6, lines 42-45, "A processor 724 (shown in Figure 7) included

on the circuit board 410 analyzes the raw analog or digital image, and performs a histogram equalization to optimize the contrast between black and white."; column 8, lines 15-21: "In preferred embodiments of the invention, the feature correlator 642 is capable of translating the reference library of data by shifting or rotating the templates in space to account for inaccuracies in sensor alignment within the vehicle, the range of possible passenger seat positions, improper installation of child carrier seats, and random movement of passengers.")

- 1.5 The subject matter of **claim 3** is not novel. Additionally to the subject matter of claim 1 document D₁ discloses that
- the method includes a step of smoothing the classification of the occupant over time
(column 7, lines 6-15: "In addition, the history of prior classifications and their associated confidence values can be constantly analyzed to improve the reliability of the current classification decision generated by the occupant sensor. Thus, if the overall confidence, or calculated accuracy, is high based upon the conclusion that the sensed image is, for example, a rear-facing child carrier, the processor will communicate this status to the airbag control electronics to inhibit the deployment of the passenger-side airbag.").
- 1.6 The subject matter of **claim 4** is not novel. Additionally to the subject matter of claim 1 document D₁ discloses that
- the method includes a step of determining whether to activate an active restraint upon the classification of said step e).
(description column 2, lines 25-28: "Accordingly, an object of the present invention is to provide an automotive occupant safety system to enhance the safety of occupant restraint systems in vehicles."; Fig. 8)
- 1.7 The subject matter of **claim 5** is not novel. Additionally to the subject matter of claim 1 document D₁ discloses that
- said step d) further includes the step of applying expert classifier algorithm to the feature matrix.
(description column 8, 38-44: "The feature vector space 650 is then input into the classifier 652, which provides an enhanced function of classifying the correlated image. Unlike the feature correlator 642 in which the feature vector space 640 is compared to the different stored templates, the classifier 652 utilizes confidences assigned to each object to determine the most probable image classification.")

Attention is drawn to the fact that the term "expert classifier" is vague (as discussed in item VII, 1.3 below.) thereby making it hard to decide if the classifier disclosed by D₁ falls into this category.

However, according to claim 8 the application considers an artificial neural network an expert classifier and document D₂ discloses the use of an artificial neural network for classification purpose. Therefore the additional subject matter of claim 5 is not novel.

- 1.8 The subject matter of **claims 6 and 7** is not novel. Additionally to the subject matter of claim 5 document D₁ discloses that
- said step d) further includes the step of analyzing the spatial feature matrix based upon a set of training data. [claim 6]
 - the method further includes the step of creating the set of training data by capturing a plurality of images of known occupant classifications of the occupant area. [claim 7]
(description column 7, lines 46-49: "In preferred embodiments, typical shapes and configurations for comparison are included in a template or reference library indicating the various types of objects or images to be differentiated and distinguished.")
- 1.9 The subject matter of **claim 8** is not novel. Document D₂ discloses additionally to the subject matter of claim 1
- that an expert classifier is used for classification [claim 5]
 - and that in particular, the classifier is an artificial neural network.[claim 8]
(description column 16, lines 11-13: "The use of trainable pattern recognition technologies such as neural networks is an important part of the instant invention.")
- 1.10 The subject matter of **claim 9** is not novel. Additionally to the subject matter of claim 1 document D₂ discloses that
- the plurality of subimages (of claim 1) overlap one another.
(According to Fig. 2 of D₂ the plurality of subimages is taken from different cameras and the Fig. 2 shows these image overlap one another.)
- 1.11 The subject matter of **claims 11 and 12** is not novel. Additionally to the subject matter of claim 10 document D₁ discloses that
- the possible outcomes of classification include adult, child, forward-facing infant

seat and rearward-facing infant seat.

(description column 4 , lines 3-24: "Preferred embodiments of the present invention perform a restraint system sensing function to control the deployment of the passenger-side airbag such that it is deployed on demand only if a forward-facing human being is present in the passenger seat. More particularly, embodiments of the invention are directed to differentiating between a child seated in a rear-facing child carrier and a forward-facing human in the passenger seat. It will be recognized that in alternate embodiments of the present invention, deployment of an air bag may be disabled only upon detection of a child sitting in a rear-facing child carrier in the passenger seat of the vehicle. In accordance with such embodiments, the airbag would deploy upon impact or collision if any forward-facing person or object is disposed in the sensor viewing area, e.g., the passenger seat. It also will be recognized that in alternate embodiments of the present invention, the relative size and position of occupants will be determined by the occupant sensing system, with the information used to optimize the initiation, rate, and inflated volume of the deployed airbag.";))

Moreover, the subject matter of claims 11 and 12 is also known from **D₃**: (document **D₃** discloses additionally to the subject matter of claim 10 in the description, column 11, lines 5-10: "Following initialization, the block 222 is executed to determine, based on the currently available occupant range data, whether the passenger seat 16 is occupied by a forward facing infant seat (FFIS), a rear facing infant seat (RFIS), a small child, or an adult, or if the seat is simply unoccupied.")

1.12 The subject matter of **claim 13** is not novel. The additional feature of claim 11 over claim 10 is the use of a *spatial feature matrix*. This is already covered by the discussion in 1.1 and 1.2 .

1.13 The subject matter of **claim 14** is not novel. Additionally to the subject matter of claim 10 document **D₁** discloses that

- the use of at least one filter generating the spatial feature matrix based upon the plurality of subimages.

(description column 7, lines 26-32: "The segmentor 622 includes a spoke filter which can identify regions in an image which include parts of objects, passengers, and potential "sunspots" which could lead to incorrect identification of false edges. The filter allows differentiation and clarification of unnatural edges due to

things like shadows and sunlight streaming across the image space.")

- 1.14 The subject matter of **claim 15** is not novel. This claim being the analogous apparatus claim for the method claim 2 the argument given in 1.4 apply.
- 1.15 The subject matter of **claim 16** is not novel. This claim being the analogous apparatus claim for the method claim 8 the argument given in 1.9 apply.
- 1.16 The subject matter of **claim 17** is not novel. This claim being the analogous apparatus claim for the method claim 3 the argument given in 1.5 apply.
- 1.17 The subject matter of **claim 18** is not novel. The passage of D₁ already cited under 1.5 discloses that the *confidence* is used as a weight when averaging prior and the current classifications to produce the final classification result.
- 1.18 The subject matter of **claim 19** is not novel. As discussed in item VII, 1.2 the term *low-level descriptor* is vague and in particular its difference to a *feature* is not clear.
Furthermore in the field of image processing the term *filter* has a broad meaning incorporating all algorithms changing image data or extracting data from image data. Therefore no difference to the subject matter of claim 13 (and claim 10) is perceived and hence the argumentation given in 1.1 and 1.2 applies to show that the subject matter of claim 19 is not new.
- 1.19 The subject matter of **claims 21-23** is not novel. These claims being the analogous apparatus claims for the method claims 6-8 resp. the argument given in 1.8 and 1.9 resp. apply.
- 1.20 The subject matter of **claim 24** is not novel. Document D₃ discloses (additionally to the subject matter of claim 20, see above) that
step d) (of claim 20) is based upon system parameters including an orientation or a location from which the image is captured relative to the occupant area.

(column 10, lines 52-56: "The block 220 designates a series of initialization instructions executed at the commencement of each period of vehicle operation for initializing various parameters and stored values to predetermined settings.";

column 5, lines 15-26: "The range of the target T from the emitter/receiver pair is determined by the location of the received IR light relative to the emitted light. In the illustration of Figure 2 where B is the distance between emitter 22 and receiver 24, f is the focal length of the lens 52, X is the location of the received light relative to the axis of the PSD 46, the range or distance D of the target T is expressed as $(f * B/x)$, where x can be determined by the ratio $(ix - iy)/(ix + iy)$. As described below, an important aspect of this invention involves properly selecting an illumination pattern and properly analyzing the received range information." therefore it is understood that the parameters mentioned in the first cited passage relate to the relative position and orientation of the sensor to the occupant area.)

Moreover, the subject matter of claim 24 is also known from **D₄**: (document D₄ additionally to the subject matter of claim 20 (cf. abstract) discloses on p.3, lines 34-36 of the description: "Regardless of the mechanism used to trigger image processing, program execution starts with an initialization step 50 at which variables and other parameters used in the processing are set to initial values.")

2. Therefore, it is at present not clear which parts of the application could serve as a basis for a new set of claims with novel and inventive subject matter.

Re Item VII

Certain defects of the international application

1. Claims 1, 10, 20 **do not define the matter for which protection is sought or are not clear (Article 6 PCT)**
 - 1.1 The independent claims 1, 10, 20 do not define the area into which the invention falls. Therefore, the term "occupant" is not clear. It could be understood as e.g. owner of a building.
 - 1.2 In independent claim 20 and dependent claims 19 and 21 the meaning of the term *low-level descriptor* is not clear.
In particular, it is not clear what constitutes the difference to meaning of the term *feature*. Since the exchange of these two terms forms the only difference between claim 1 and 20 the difference has to be clarified.
In case claim 20 is meant to be a dependent claim of claim 1 this fact has to be clearly stated and the also in this case the meaning of the term has to be clarified in order to define the matter for which protection is sought.
 - 1.3 In dependent claim 5 the term *expert classifier algorithm* is vague and leaves the reader in doubt what kind of algorithm is envisioned.
 - 1.4 In dependent claim 9 it is obscure what technical effect the *overlapping* of the subimages has. Also the description does not enlighten this obscurity.

Re Item VIII

Certain remark on the international application

1. When referring to Fig. 1 in paragraph 18 of the description the reference marks 24c,d and 26c,d are used. However, Fig. 1 does not contain these reference marks. (Fig. 3 contains the reference marks.)